Dell™ XPS™ M1530 Service Manual

Notes, Notices, and Cautions

NOTE: A NOTE indicates important information that helps you make better use of your computer.

NOTICE: A NOTICE indicates either potential damage to hardware or loss of data and tells you how to avoid the problem.

CAUTION: A CAUTION indicates a potential for property damage, personal injury, or death.

Model PP28L

November 2007 Rev. A00

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Battery Latch Assembly

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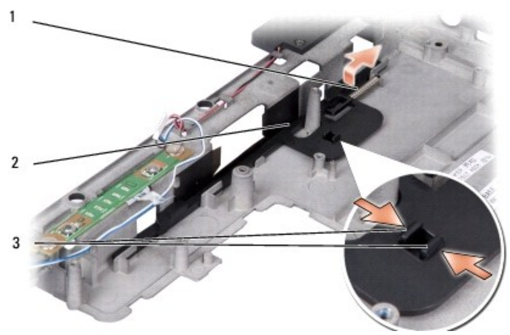
CAUTION: Before you begin the following procedure, follow the safety instructions in the *Product Information Guide*.

NOTICE: To avoid electrostatic discharge, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface (such as the back panel) on the computer.

NOTICE: To help prevent damage to the system board, remove the main battery (see Before Working Inside Your Computer) before working inside the computer.

Removing the Battery Latch Assembly

1. Follow the instructions in Before Working Inside Your Computer.
2. Remove the hinge cover (see Removing the Hinge Covers and Center Control Cover).
3. Remove the keyboard (see Removing the Keyboard).
4. Remove the display assembly (see Removing the Display Assembly).
5. Remove the palm rest (see Removing the Palm Rest).
6. Remove the system board (see Removing the System Board).
7. Squeeze the plastic clips together to release the button and slide the battery latch assembly to the right to remove it.



1	spring	2	battery latch assembly
3	plastic clips		

8. Remove the spring from the hook on the computer base by lifting it up and away with a screwdriver or a plastic scribe.
9. Remove the plastic battery-latch assembly starting from the right side corner and proceeding towards the other end as shown above in the illustrations.

Replacing the Battery Latch Assembly

1. Insert the latch assembly into the channel on the computer base, and press it into place.
2. Using a small screwdriver, hook the spring over the hook on the computer base.
3. Place the battery latch release under the computer base and line it up with the plastic clips in the base.

   Ensure that the newly installed latch moves smoothly and freely when pushed and released.

4. Replace the system board (see Replacing the System Board).

5. Replace in reverse order the other components that you removed in Removing the Battery Latch Assembly.

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Before You Begin

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This section provides procedures for removing and installing the components in your computer. Unless otherwise noted, each procedure assumes that the following conditions exist:

- You have performed the steps in Turning Off Your Computer and Before Working Inside Your Computer.
- You have read the safety information in the Dell™ *Product Information Guide.*
- A component can be replaced or—if purchased separately—installed by performing the removal procedure in reverse order.

Recommended Tools

The procedures in this document may require the following tools:

- Small flat-blade screwdriver
- Phillips screwdriver
- Hex nut driver
- Flash BIOS update program CD

Turning Off Your Computer

NOTICE: To avoid losing data, save and close all open files and exit all open programs before you turn off your computer.

1. Save and close all open files and exit all open programs.
2. Click **Start** , click the arrow , and then click **Shut Down**.

   The computer turns off after the operating system shutdown process finishes.

3. Ensure that the computer and any attached devices are turned off. If your computer and attached devices did not automatically turn off when you shut down your operating system, press and hold the power button for at least 8 to 10 seconds until the computer turns off.

Before Working Inside Your Computer

Use the following safety guidelines to help protect your computer from potential damage and to help to ensure your own personal safety.

CAUTION: Before you begin any of the procedures in this section, follow the safety instructions in the *Product Information Guide*.

NOTICE: Handle components and cards with care. Do not touch the components or contacts on a card. Hold a card by its edges or by its metal mounting bracket. Hold a component such as a processor by its edges, not by its pins.

NOTICE: Only a certified service technician should perform repairs on your computer. Damage due to servicing that is not authorized by Dell is not covered by your warranty.

NOTICE: When you disconnect a cable, pull on its connector or on its pull-tab, not on the cable itself. Some cables have connectors with locking tabs; if you are disconnecting this type of cable, press in on the locking tabs before you disconnect the cable. As you pull connectors apart, keep them evenly aligned to avoid bending any connector pins. Also, before you connect a cable, ensure that both connectors are correctly oriented and aligned.

NOTICE: To avoid damaging the computer, perform the following steps before you begin working inside the computer.

1. Ensure that the work surface is flat and clean to prevent the computer cover from being scratched.
2. Turn off your computer (see Turning Off Your Computer).
3. If the computer is connected to a docking device (docked), undock it. See the documentation that came with your docking device for instructions.

NOTICE: To disconnect a network cable, first unplug the cable from your computer and then unplug the cable from the network device.

4. Disconnect all telephone or network cables from the computer.

5. Disconnect your computer and all attached devices from their electrical outlets.

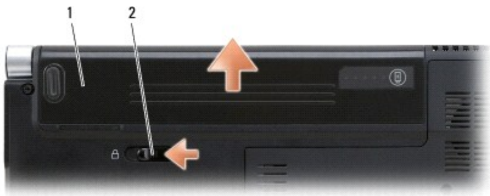
NOTICE: To help prevent damage to the system board, you must remove the battery from the battery bay before you service the computer.

NOTICE: To avoid damage to the computer, use only the battery designed for this particular Dell computer. Do not use batteries designed for other Dell computers.

6. Turn the computer over.

7. Slide and click the battery latch release.

8. Slide the battery out of the battery bay.



1	battery	2	battery-bay latch release

9. Turn the computer top-side up, open the display, and press the power button to ground the system board.

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Biometric Module

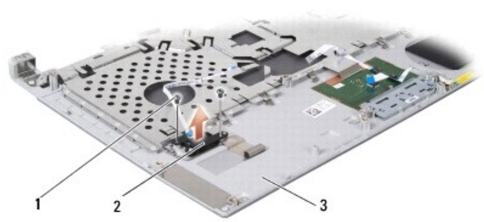
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CAUTION: Before you begin any of the procedures in this section, follow the safety instructions in the *Product Information Guide*.

NOTICE: To avoid electrostatic discharge, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface (such as the back panel) on the computer.

Removing the Biometric Module

1. Follow the instructions in Before You Begin.
2. Remove the hinge covers and center control cover (see Removing the Hinge Covers and Center Control Cover).
3. Remove the keyboard (see Removing the Keyboard).
4. Remove the display assembly (see Removing the Display Assembly).
5. Remove the palm rest (see Removing the Palm Rest).
6. Remove the two screws that secure the biometric module to the computer base.



1	screw (2)	2	biometric module
3	palm rest (view from below)		

7. Remove the biometric module.

Replacing the Biometric Module

1. Replace the biometric module.
2. Replace the two screws that secure the biometric module to the computer base.
3. Replace the palm rest (see Replacing the Palm Rest).
4. Replace the display assembly (see Replacing the Display Assembly).
5. Replace the keyboard (see Replacing the Keyboard).
6. Replace the hinge covers and center control cover (see Replacing the Hinge Covers and Center Control Cover).

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Flashing the BIOS

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If a BIOS-update program CD is provided with the new system board, flash the BIOS from the CD. If you do not have a BIOS-update program CD, flash the BIOS from the hard drive.

Flashing the BIOS From a CD

1. Ensure that the AC adapter is plugged in and that the main battery is installed properly.

NOTE: If you use a BIOS-update program CD to flash the BIOS, set up the computer to boot from a CD before inserting the CD.

2. Insert the BIOS-update program CD, and restart the computer.

   Follow the instructions that appear on the screen. The computer continues to boot and updates the new BIOS. When the flash update is complete, the computer will automatically reboot.

3. Press <F2> during POST to enter the system setup program.
4. Press <Alt> and <F> to reset the computer defaults.
5. Press <Esc>, select **Save changes and reboot**, and press <Enter> to save configuration changes.
6. Remove the flash BIOS-update program CD from the drive and restart the computer.

Flashing the BIOS From the Hard Drive

1. Ensure that the AC adapter is plugged in, the main battery is properly installed, and a network cable is attached.
2. Turn on the computer.
3. Locate the latest BIOS update file for your computer at **support.dell.com**.
4. Click **Download Now** to download the file.
5. If the **Export Compliance Disclaimer** window appears, click **Yes, I Accept this Agreement**.

   The **File Download** window appears.

6. Click **Save this program to disk** and then click **OK**.

   The **Save In** window appears.

7. Click the down arrow to view the **Save In** menu, select **Desktop**, and then click **Save**.

   The file downloads to your desktop.

8. Click **Close** if the **Download Complete** window appears.

   The file icon appears on your desktop and is titled the same as the downloaded BIOS update file.

9. Double-click the file icon on the desktop and follow the instructions on the screen.

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Internal Card With Bluetooth® Wireless Technology

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CAUTION: Before you begin any of the procedures in this section, follow the safety instructions in the *Product Information Guide*.

NOTICE: To avoid electrostatic discharge, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface (such as a connector on the back of the computer).

NOTICE: To help prevent damage to the system board, you must remove the battery from the battery bay before you begin working inside the computer.

If you ordered a card with Bluetooth wireless technology with your computer, it is already installed.

Removing the Card

1. Follow the procedures in Before You Begin.
2. Remove the center control cover (see Removing the Hinge Covers and Center Control Cover).
3. Remove the bluetooth cable from its routing.
4. Pull the bluetooth card out of the box.



1	box	2	bluetooth card	3	cable connector

5. Disconnect the cable connector from the card.
6. Remove the card from the computer.

Replacing the Card

1. Connect the cable connector to the card.
2. Insert the bluetooth card into the box.
3. Replace the center control cover (see Replacing the Hinge Covers and Center Control Cover).

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Button Board

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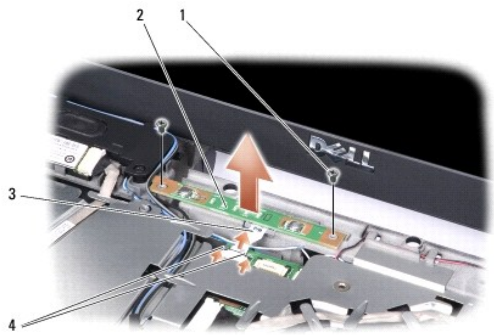
CAUTION: Before you begin any of the procedures in this section, follow the safety instructions in the *Product Information Guide*.

NOTICE: To avoid electrostatic discharge, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface (such as a connector on the back of the computer).

NOTICE: To help prevent damage to the system board, you must remove the battery from the battery bay before you begin working inside the computer.

Removing the Button Board

1. Follow the procedures in Before You Begin.
2. Remove the Center Control Cover and Hinge Covers (see Removing the Hinge Covers and Center Control Cover).
3. Remove the keyboard (see Removing the Keyboard).



1	screw (2)	2	button board
3	button board cable	4	black securing tabs

4. Remove the two screws securing the button board.
5. To release the button board cable, pull the black securing tabs of the cable connector with your fingertips and ease out the cable.
6. Remove the button board from the system.

Replacing the Button Board

1. Replace the button board.
2. To reconnect the cable that attaches the button board to the system board, place the cable inside the cable connector and push its black securing tabs inside with your fingertips.

NOTICE: The keycaps on the keyboard are fragile, easily dislodged, and time-consuming to replace. Be careful when removing and handling the keyboard.

3. Replace the two screws that secure the button board to the system board.
4. Replace the keyboard (see Replacing the Keyboard).

5. Replace the Hinge Covers and the Center Control Cover (see Replacing the Hinge Covers and Center Control Cover).

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LCD Camera

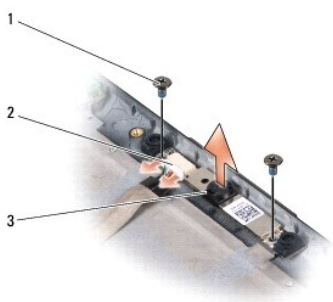
Dell™ XPS™ M1530 Service Manual

CAUTION: Before working inside your computer, follow the safety instructions in the *Product Information Guide*.

NOTICE: To avoid electrostatic discharge, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface (such as a connector on the back of the computer).

Removing the LCD Camera

1. Follow the instructions in Before You Begin.
2. Remove the display assembly (see Display Assembly).
3. Remove the display bezel (see Removing the Display Bezel).
4. Remove the display panel (see Removing the Display Panel).
5. Remove the LCD camera cable from the routing channel.
6. Remove the two screws securing the LCD camera.



1	screw (2)	2	camera cable connector	3	camera

7. Disconnect the camera cable from the connector.
8. Remove the LCD camera.

Replacing the LCD Camera

1. Align the camera over the screw holes.
2. Replace the two screws that secure the camera to the display.
3. Reconnect the camera cable to the connector.
4. Replace the display panel (see Replacing the Display Panel).
5. Replace the display bezel (see Replacing the Display Bezel).
6. Replace the display assembly (see Replacing the Display Assembly).

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Charger Board

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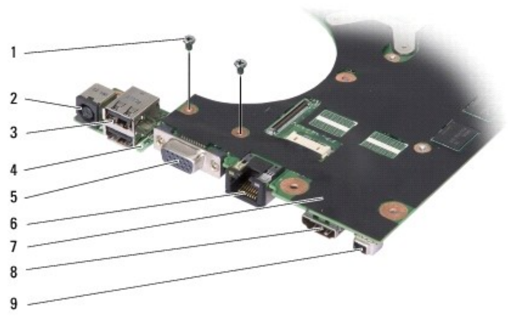
CAUTION: Before you begin any of the procedures in this section, follow the safety instructions in the *Product Information Guide*.

NOTICE: To avoid electrostatic discharge, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface (such as a connector on the back of the computer).

NOTICE: To help prevent damage to the system board, you must remove the battery from the battery bay before you begin working inside the computer.

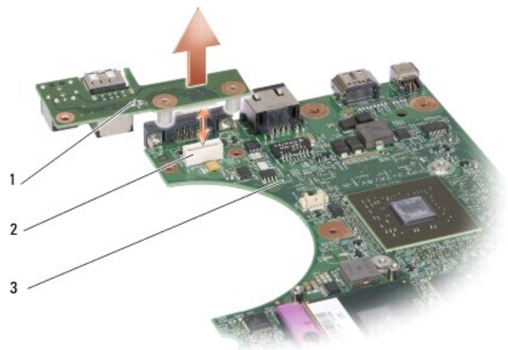
Removing the Charger Board

1. Follow the procedures in Before You Begin.
2. Remove the system board (see Removing the System Board).
3. Remove the two screws that secure the charger board to the system board.



1	screw (2)	2	AC adapter connector
3	USB connector (2)	4	charger board
5	VGA connector	6	network connector (RJ-45)
7	system board	8	HDMI connector
9	IEEE 1394a connector		

4. Turn the system board over and detach the charger board from the system board connector.



1	charger board (view from below)	2	system board connector

3	system board (view from below)		

Replacing the Charger Board

1. Attach the charger board to the system board connector.
2. Replace the two screws that secure the charger board to the system board connector.
3. Replace the system board (see Replacing the System Board).
4. Replace the wireless sniffer board (see Replacing the Wireless Sniffer Board).
5. Replace the ExpressCard reader (see Replacing the ExpressCard Reader).
6. Replace the optical drive (see Replacing the Optical Drive).
7. Replace the palm rest (see Replacing the Palm Rest).
8. Replace the keyboard (see Replacing the Keyboard).
9. Replace the hinge covers and center control cover (see Replacing the Hinge Covers and Center Control Cover).

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Coin-Cell Battery

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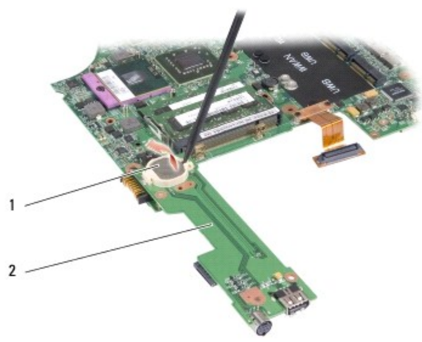
CAUTION: Before you begin any of the procedures in this section, follow the safety instructions in the *Product Information Guide*.

NOTICE: To avoid electrostatic discharge, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface (such as a connector on the back of the computer).

NOTICE: To help prevent damage to the system board, you must remove the battery from the battery bay before you begin working inside the computer.

Removing the Coin-Cell Battery

1. Follow the procedures in Before You Begin.
2. Remove the system board (see Removing the System Board).
3. Remove the S-Video board (see Removing the S-Video Board).
4. Turn the S-Video board over.



1	coin-cell battery	2	S-Video board

5. Use a screw driver to push the coin cell battery forward and upward to release it from the slot.

Replacing the Coin-Cell Battery

1. Replace the coin cell battery.
2. Replace the S-Video board (see Replacing the S-Video Board).
3. Replace the system board (see Replacing the System Board).
4. Replace the wireless sniffer board (see Replacing the Wireless Sniffer Board).
5. Replace the ExpressCard reader (see Replacing the ExpressCard Reader).
6. Replace the optical drive (see Replacing the Optical Drive).
7. Replace the palm rest (see Replacing the Palm Rest).
8. Replace the keyboard (see Replacing the Keyboard).

9. Replace the center control cover (see Replacing the Hinge Covers and Center Control Cover).

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Processor

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CAUTION: Before working inside your computer, follow the safety instructions in the *Product Information Guide*.

NOTICE: To avoid electrostatic discharge, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface (such as a connector on the back of the computer).

NOTICE: To prevent intermittent contact between the ZIF-socket cam screw and the processor when removing or replacing the processor, press to apply slight pressure to the center of the processor while turning the cam screw.

NOTICE: To avoid damage to the processor, hold the screwdriver so that it is perpendicular to the processor when turning the cam screw.

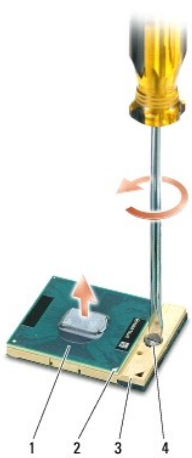
Removing the Processor

1. Follow the instructions in Before You Begin.
2. Remove the processor thermal-cooling assembly (see Removing the Processor Thermal-Cooling Assembly).

NOTICE: When removing the processor, pull it straight up. Be careful not to bend the pins on the processor.

3. To loosen the ZIF socket, use a small, flat-blade screwdriver and rotate the ZIF-socket cam screw counterclockwise until it comes to the cam stop.

   The ZIF-socket cam screw secures the processor to the system board. Take note of the arrow on the ZIF-socket cam screw.



1	processor	2	pin-1 corner of processor	3	ZIF socket
4	ZIF-socket cam screw				

4. Use a processor extraction tool to remove the processor.

Installing the Processor

NOTICE: Ensure that the cam lock is in the fully open position before seating the processor. Seating the processor properly in the ZIF socket does not require force.

NOTICE: A processor that is not properly seated can result in an intermittent connection or permanent damage to the processor and ZIF socket.

1. Align the pin-1 corner of the processor so that it points to the triangle on the system board, and insert the processor into the ZIF socket.

   When the processor is correctly seated, all four corners are aligned at the same height. If one or more corners of the processor are higher than the others, the processor is not seated correctly.

NOTICE: To prevent intermittent contact between the ZIF-socket cam screw and the processor when removing or replacing the processor, press to apply slight pressure to the center of the processor while turning the cam screw.

2. Tighten the ZIF socket by turning the cam screw clockwise to secure the processor to the system board.

3. Peel the backing off the thermal cooling pad and adhere the pad to the portion of the thermal-cooling assembly that covers the processor.

4. Replace the processor thermal-cooling assembly (see Replacing the Processor Thermal-Cooling Assembly).

5. Replace the module cover.

6. Update the BIOS using a flash BIOS-update program CD. See (Flashing the BIOS).

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Processor Thermal-Cooling Assembly

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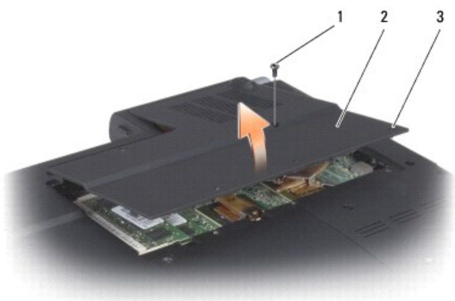
CAUTION: Before working inside your computer, follow the safety instructions in the *Product Information Guide*.

NOTICE: To avoid electrostatic discharge, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface (such as a connector on the back of the computer).

Removing the Processor Thermal-Cooling Assembly

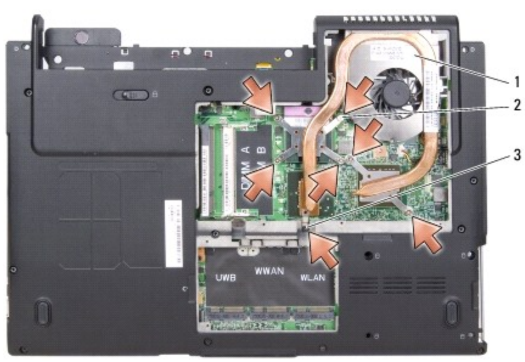
1. Follow the instructions in Before You Begin.

2. Turn the computer upside down and loosen the four captive screws along with the M2.5 x 5-mm screw. Remove the module cover.



1	M2.5 x 5-mm screw	2	module cover
3	captive screw (4)		

3. Loosen the six captive screws along with the M2.5 x 5-mm screw from the thermal-cooling assembly.



1	thermal-cooling assembly	2	captive screw (6)
3	M2.5 x 5-mm screw		



1	fan cable connector	2	M2.5 x 5-mm screw

4. Disconnect the thermal fan cable connector from the system board.

NOTE: The fan is a part of the thermal-cooling assembly.

5. Tilt the thermal-cooling assembly slightly and lift it out of the computer.

Replacing the Processor Thermal-Cooling Assembly

CAUTION: Before working inside your computer, follow the safety instructions in the *Product Information Guide*.

NOTICE: To prevent static damage to components inside your computer, discharge static electricity from your body before you touch any of your computer's electronic components. You can do so by touching an unpainted metal surface.

NOTE: The original pad can be reused if the original processor and heat sink are reinstalled together. If either the processor or heat sink is replaced, use the thermal pad provided in the kit to ensure that thermal conductivity is achieved.

NOTE: This procedure assumes that you have already removed the processor thermal-cooling assembly and are ready to replace it.

1. Peel the backing off the thermal cooling pad and adhere the pad to the portion of the thermal-cooling assembly that covers the processor.

2. Place the assembly on the system board.

3. Tighten the six captive screws and the M2.5 x 5-mm screw on the thermal- cooling assembly.

4. Replace the module cover.

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Display Assembly

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CAUTION: Before you begin any of the procedures in this section, follow the safety instructions in the *Product Information Guide*.

NOTICE: To avoid electrostatic discharge, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface (such as a connector on the back of the computer).

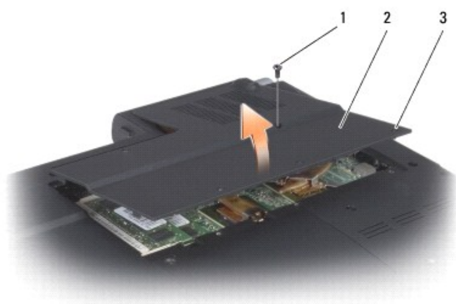
NOTICE: To help prevent damage to the system board, you must remove the battery from the battery bay before you begin working inside the computer.

Removing the Display Assembly

1. Follow the instructions in Before You Begin.

2. Remove the Hinge Covers and the Center Control Cover (see Removing the Hinge Covers and Center Control Cover).

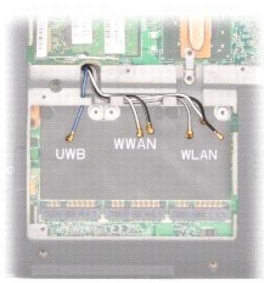
3. Turn the computer upside down and loosen the four captive screws along with the M2.5 x 5-mm screw. Remove the memory module cover.



1	M2.5 x 5-mm screw	2	memory module cover
3	captive screw (4)		

4. Remove the Mini Card cables from the Mini Cards if applicable (see Wireless Mini Cards).

5. Make note of the cable routing and carefully dislodge the Mini-Card antenna cables from their routing guides.



6. Remove the two M2.5 x 5-mm screws labeled "D" from the computer base.

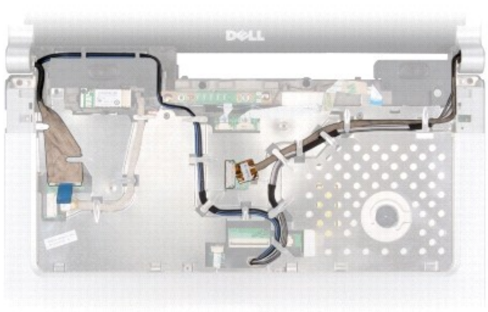


7. Remove the keyboard (see Removing the Keyboard).

8. Remove the two M2.5 x 8-mm screws from each side of the display assembly.

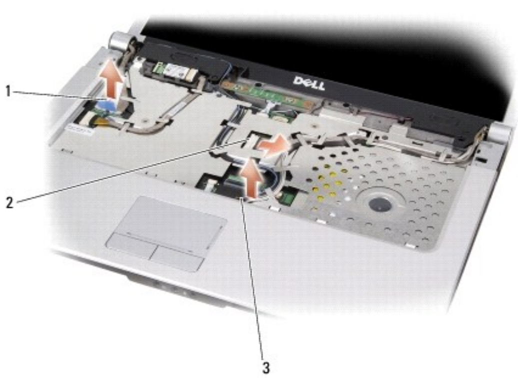


9. Make note of the cable routing and carefully dislodge the Mini-Card antenna cables from their routing guides and pull the cables with their connectors through the system board so that they are clear of the computer base.



10. Pull on the display cable pull-tab to disconnect the display cable from the display connector on the system board.

11. Remove the camera cable connector from the system board.



1	display cable pull-tab	2	camera cable connector
3	pull the Mini-Card antenna cables out of the computer base through here		

12. Remove the display assembly from the computer base.

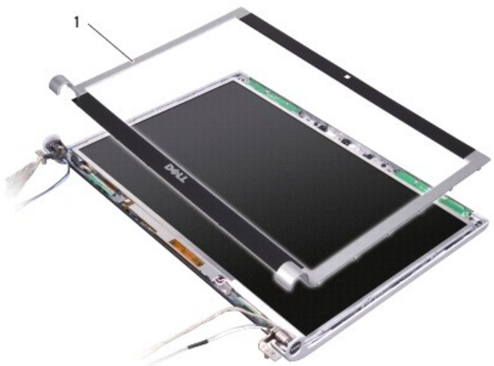
Replacing the Display Assembly

1. Replace the camera cable.
2. Reconnect the display cable to the connector on the system board.
3. Make note of the cable routing and carefully slide the Mini-Card antenna cables through the system board and into their routing guides.
4. Replace the two M2.5 x 8-mm screws on each side of the display assembly.
5. Replace the keyboard (see Replacing the Keyboard).
6. Turn the computer over and replace the two M2.5 x 5-mm screws labeled "D" on the computer base.
7. Make note of the cable routing and carefully insert the Mini-Card antenna cables through their routing guides.
8. Reconnect the mini card cables to the Mini Cards if applicable (see Wireless Mini Cards).
9. Replace the hinge covers and center control cover (see Replacing the Hinge Covers and Center Control Cover).

Removing the Display Bezel

NOTICE: The display bezel is extremely fragile. Be careful when removing it to prevent damaging the bezel.

1. Remove the display assembly (see Removing the Display Assembly).
2. Using your fingertips, carefully pry up the inside edge of the display bezel.
3. Remove the display bezel.



1	display bezel

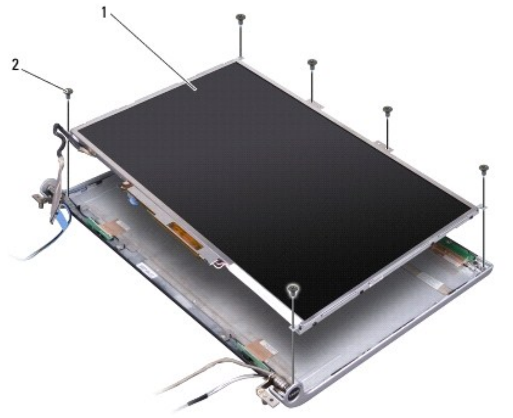
Replacing the Display Bezel

Realign the display bezel over the display panel, and gently snap into place.

Removing the Display Panel

1. Remove the display assembly (see Removing the Display Assembly).
2. Remove the display bezel (see Removing the Display Bezel).

3. Remove the six screws securing the display panel brackets.



1	display panel	2	screw (6)

4. Remove the display panel.

5. Remove the eight screws (four on each side) that secure the display panel brackets to the display panel.



1	display panel bracket (1 left, 1 right)	2	screw (8 total; 4 on each side)

Replacing the Display Panel

1. Attach the display bracket to the display panel by replacing the four screws on each side of the display panel.

2. Align the display panel with the display back and replace the six screws.

3. Replace the display bezel (see Replacing the Display Bezel).

4. Replace the display assembly (see Replacing the Display Assembly).

Removing the Display Panel Cable

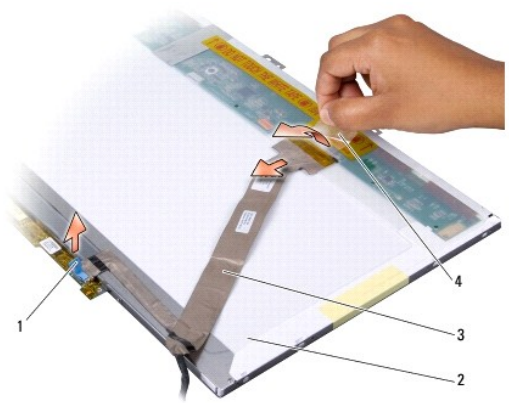
1. Remove the display assembly (see Removing the Display Assembly).

2. Remove the display bezel (see Removing the Display Bezel).

3. Remove the display panel (see Removing the Display Panel).

4. Turn over the display panel, placing it on a clean surface.

NOTICE: To avoid damage to the computer when replacing the bottom flex cable, gently support the bottom of the inverter board with one finger as you reseat the bottom flex-cable connector. Do not bend the inverter board.



1	pull-tab of the bottom flex-cable connector	2	back of display panel
3	flex-cable	4	tape securing the top flex-cable connector

5. Gently pull the pull-tab on the bottom flex-cable connector to release the cable from the inverter board.

6. Lift the tape that secures the top flex-cable connector and disconnect the connector.

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Hard Drive

Dell™ XPS™ M1530 Service Manual

CAUTION: If you remove the hard drive from the computer when the drive is hot, *do not touch* **the metal housing of the hard drive.**

CAUTION: Before you begin any of the procedures in this section, follow the safety instructions in the *Product Information Guide*.

NOTICE: To prevent data loss, turn off your computer (see Turning Off Your Computer) before removing the hard drive. Do not remove the hard drive while the computer is on or in Sleep state.

NOTICE: Hard drives are extremely fragile. Exercise care when handling the hard drive.

NOTE: Dell does not guarantee compatibility or provide support for hard drives from sources other than Dell.

NOTE: If you are installing a hard drive from a source other than Dell, you need to install an operating system, drivers, and utilities on the new hard drive (see "Restoring Your Operating System" and "Reinstalling Drivers and Utilities" in your *Owner's Manual*).

Removing the Hard Drive

1. Follow the procedures in Before You Begin.
2. Turn the computer over.
3. Remove the four M3 x 3-mm screws and slide the hard drive out of the bay.



NOTICE: When the hard drive is not in the computer, store it in protective antistatic packaging (see "Protecting Against Electrostatic Discharge" in the *Product Information Guide*).

4. Remove the two screws from either side of the hard drive bezel and remove the bezel.



1	hard drive bezel	2	screw (2)

Replacing the Hard Drive

1. Remove the new drive from its packaging.

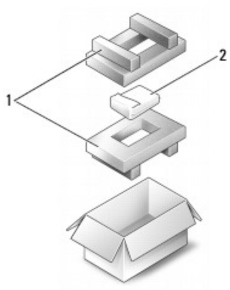
   Save the original packaging for storing or shipping the hard drive.

NOTICE: Use firm and even pressure to slide the drive into place. If you use excessive force, you may damage the connector.

2. Replace the two screws on either side of the hard drive to connect it to the bezel.
3. Slide the hard drive into the bay.
4. Replace and tighten the four screws on the hard drive cover.
5. Install the operating system for your computer, as needed (see "Restoring Your Operating System" in your computer *Owner's Manual*).
6. Install the drivers and utilities for your computer, as needed (see "Reinstalling Drivers and Utilities" in your computer *Owner's Manual*).

Returning a Hard Drive to Dell

Return your old hard drive to Dell in its original, or comparable, foam packaging. Otherwise, the hard drive may be damaged in transit.



1	foam packaging	2	hard drive

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Hard Drive Cage

Dell™ XPS™ M1530 Service Manual

CAUTION: Before you begin any of the procedures in this section, follow the safety instructions in the *Product Information Guide*.

NOTICE: To avoid electrostatic discharge, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface (such as the back panel) on the computer.

Removing the Hard Drive Cage

1. Follow the instructions in Before You Begin.
2. Remove the hard drive (see Removing the Hard Drive).
3. Remove the hinge covers and center control cover (see Removing the Hinge Covers and Center Control Cover).
4. Remove the keyboard (see Removing the Keyboard).
5. Remove the display assembly (see Removing the Display Assembly).
6. Remove the palm rest (see Removing the Palm Rest).
7. Remove the screw securing the hard drive cage to the computer base.



1	screw	2	hard drive cage

8. Push the hard drive cage to the side to release it from the pin holding the cage in place.
9. Slide the hard drive cage forward at an angle and lift it out.

Replacing the Hard Drive Cage

1. Replace the hard drive cage.
2. Replace the screw that secures the hard drive cage to the computer base.
3. Replace the palm rest (see Replacing the Palm Rest).
4. Replace the display assembly (see Replacing the Display Assembly).
5. Replace the keyboard (see Replacing the Keyboard).

6. Replace the hinge covers and center control cover (see Replacing the Hinge Covers and Center Control Cover).

7. Replace the hard drive (see Replacing the Hard Drive).

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Hinge Covers and Center Control Cover

Dell™ XPS™ M1530 Service Manual

CAUTION: Before you begin any of the procedures in this section, follow the safety instructions in the *Product Information Guide*.

NOTICE: To avoid electrostatic discharge, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface (such as a connector on the back of the computer).

NOTICE: To help prevent damage to the system board, you must remove the battery from the battery bay before you begin working inside the computer.

Removing the Hinge Covers and Center Control Cover

1. Follow the procedures in Before You Begin.

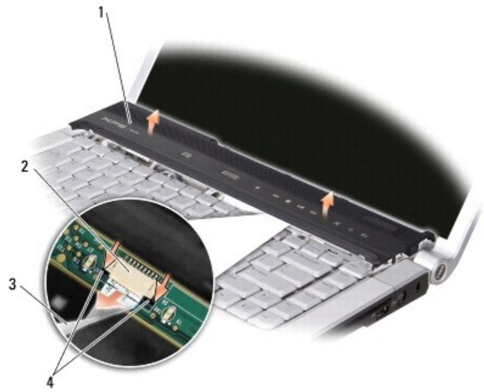
2. Turn the computer over and remove the three M2 x 2-mm screws that secure the center control cover.



3. Turn the computer top side up, and open the display as far as it will open.

4. Ease the center control cover up until you see the cable connector that attaches the cable to the system board.

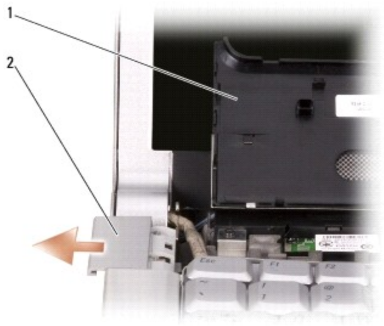
NOTICE: Be extremely careful when removing the Center Control Cover. The cover along with the cable that attaches to it are very fragile.



1	center control cover	2	center control cover cable connector	3	center control cover cable
4	black securing tabs				

5. Pull the black securing tabs of the cable connector with your fingertips and ease out the cable.

6. Remove the hinge covers from each side of the computer.



1	center control cover	2	hinge cover (2)

Replacing the Hinge Covers and Center Control Cover

1. Replace the hinge covers.

2. To reconnect the cable that attaches the center control cover to the system board, place the cable inside the cable connector and push its black securing tabs inside with your fingertips.

3. Snap the center control cover in place.

4. Turn the computer over and replace the three M2 x 2-mm screws that secure the center control cover to the computer base.

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Keyboard

Dell™ XPS™ M1530 Service Manual

- Removing the Keyboard
- Replacing the Keyboard

For more information about the keyboard, see "Using the Keyboard and Touchpad" in your *Owner's Manual*.

CAUTION: Before you begin any of the procedures in this section, follow the safety instructions in the *Product Information Guide*.

NOTICE: To avoid electrostatic discharge, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface (such as a connector on the back of the computer).

NOTICE: To help prevent damage to the system board, you must remove the battery from the battery bay before you begin working inside the computer.

Removing the Keyboard

1. Follow the procedures in Before You Begin.
2. Remove the Center Control Cover and Hinge Covers (see Removing the Hinge Covers and Center Control Cover).
3. Remove the two M2.5 x 5-mm screws at the top of the keyboard.

NOTICE: The keycaps on the keyboard are fragile, easily dislodged, and time-consuming to replace. Be careful when removing and handling the keyboard.

4. Carefully slide the keyboard toward the back of the computer.

NOTICE: Be extremely careful when removing and handling the keyboard. Failure to do so could result in scratching the display panel.



1	M2.5 x 5-mm screw (2)	2	keyboard
3	keyboard tab (5)	4	keyboard cable
5	plastic securing bar		

5. Pull up on the plastic bar that secures the keyboard cable to the system board and remove the keyboard

Replacing the Keyboard

1. Slide the keyboard cable connector into the slot until it clicks and pull down on the plastic bar that secures the keyboard cable to the system board.
2. Align the five tabs along the bottom of the keyboard and slide them under the palm rest.

NOTICE: The keycaps on the keyboard are fragile, easily dislodged, and time-consuming to replace. Be careful when removing and handling the keyboard.

3. Replace the two M2.5 x 5-mm screws along the top of the keyboard.

4. Replace the Hinge Covers and the Center Control Cover (see Replacing the Hinge Covers and Center Control Cover).

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Memory

Dell™ XPS™ M1530 Service Manual

CAUTION: Before you begin any of the procedures in this section, follow the safety instructions in the *Product Information Guide*.

You can increase your computer memory by installing memory modules on the system board. See "Specifications" in your *Owner's Manual* for information on the memory supported by your computer. Install only memory modules that are intended for your computer.

NOTE: Memory modules purchased from Dell are covered under your computer warranty.

Your computer has two user-accessible SODIMM sockets that can be accessed from the bottom of the computer.

NOTICE: If you need to install memory modules in two connectors, install a memory module in the connector labeled "DIMM B" before you install a module in the connector labeled "DIMM A."

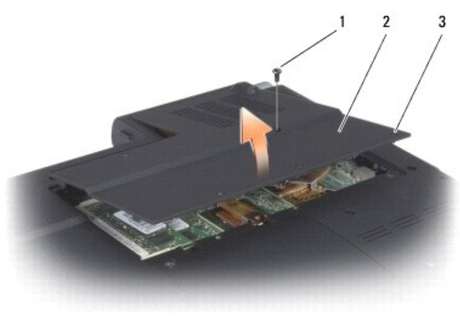
Removing the DIMM A Memory Module

NOTICE: To avoid electrostatic discharge, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface (such as a connector on the back of the computer).

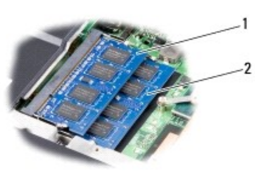
The DIMM A memory module is located directly above the DIMM B memory module located on the bottom of the computer.

1. Follow the procedures in Before You Begin.

2. Turn the computer over and loosen the four captive screws along with the M2.5 x 5-mm screw. Remove the module cover.



1	M2.5 x 5-mm screw	2	module cover
3	captive screw (4)		

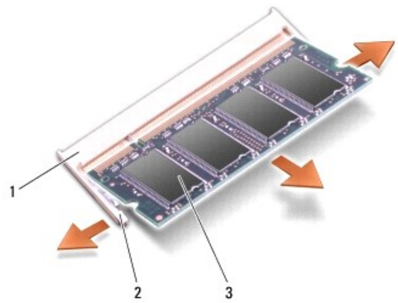


1	DIMM A memory module	2	DIMM B memory module

NOTICE: To prevent damage to the memory module connector, do not use tools to spread the memory module securing clips.

3. Use your fingertips to carefully spread apart the securing clips on each end of the memory module connector until the module pops up.

4. Remove the module from the connector.



1	upper memory module connector	2	securing clip (2)
3	memory module (DIMM A)		

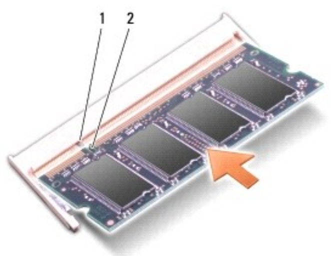
Replacing the DIMM A Memory Module

NOTICE: To avoid electrostatic discharge, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface (such as a connector on the back of the computer).

1. Align the notch in the module edge connector with the tab in the connector slot.

2. Slide the module firmly into the slot at a 45-degree angle, and press the module down until it clicks into place. If you do not feel the click, remove the module and reinstall it.

NOTE: If the memory module is not installed properly, the computer may not boot. No error message indicates this failure.



1	tab	2	notch

NOTICE: If the cover is difficult to close, remove the module and reinstall it. Forcing the cover to close may damage your computer.

3. Replace the module cover.

4. Insert the battery into the battery bay, or connect the AC adapter to your computer and an electrical outlet.

5. Turn on the computer.

As the computer boots, it detects the additional memory and automatically updates the system configuration information.

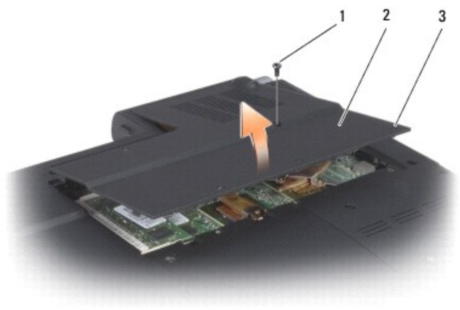
To confirm the amount of memory installed in the computer, click **Start** → **Help and Support**→ **Dell System Information**.

Removing the DIMM B Memory Module

NOTICE: If a memory module is installed in the DIMM A connector, remove it prior to removing the memory module from the DIMM B connector. Failure to do so could result in damaging both memory modules.

1. Follow the procedures in Before You Begin.

2. Turn the computer over and loosen the four captive screws along with the M2.5 x 5-mm screw. Remove the module cover.



1	M2.5 x 5-mm screw	2	module cover
3	captive screw (4)		



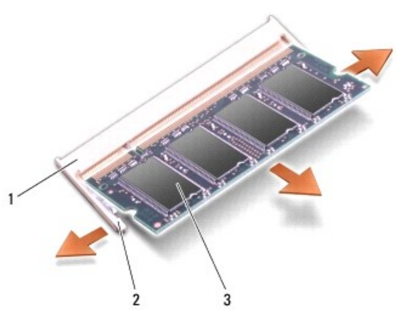
1	DIMM A memory module	2	DIMM B memory module

NOTICE: To prevent damage to the memory module connector, do not use tools to spread the memory module securing clips.

NOTICE: To avoid electrostatic discharge, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface (such as a connector on the back of the computer).

3. Use your fingertips to carefully spread apart the securing clips on each end of the memory module connector until the module pops up.

4. Remove the module from the connector.



1	lower memory module connector	2	securing clip (2)
3	memory module (DIMM B)		

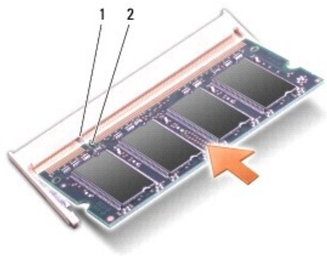
Replacing the DIMM B Memory Module

NOTICE: To avoid electrostatic discharge, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface (such as a connector on the back of the computer).

1. Align the notch in the module edge connector with the tab in the connector slot.

2. Slide the module firmly into the slot at a 45-degree angle, and rotate the module down until it clicks into place. If you do not feel the click, remove the module and reinstall it.

NOTE: If the memory module is not installed properly, the computer may not boot. No error message indicates this failure.



1	tab	2	notch

NOTICE: If the cover is difficult to close, remove the module and reinstall it. Forcing the cover to close may damage your computer.

3. Replace the module cover.

4. Insert the battery into the battery bay, or connect the AC adapter to your computer and an electrical outlet.

5. Turn on the computer.

As the computer boots, it detects the additional memory and automatically updates the system configuration information.

To confirm the amount of memory installed in the computer, click **Start** → **Help and Support**→ **Dell System Information**.

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Communication Cards

Dell™ XPS™ M1530 Service Manual

Subscriber Identity Module

Subscriber Identity Modules (SIM) identify users uniquely through an International Mobile Subscriber Identity.

CAUTION: Before you begin any of the procedures in this section, follow the safety instructions in the *Product Information Guide*.

NOTE: Only Cingular and Vodafone need a SIM. Verizon, Sprint, and Telus do not use SIMs.

1. Follow the procedures in Before You Begin.

2. In the battery bay, slide the SIM into the compartment.



1	SIM	2	battery bay

Wireless Mini Cards

CAUTION: Before you begin any of the procedures in this section, follow the safety instructions in the *Product Information Guide*.

NOTICE: To help prevent damage to the system board, you must remove the battery from the battery bay before you begin working inside the computer.

If you ordered a wireless Mini Card with your computer, the card is already installed. Your computer supports three types of wireless Mini Cards:

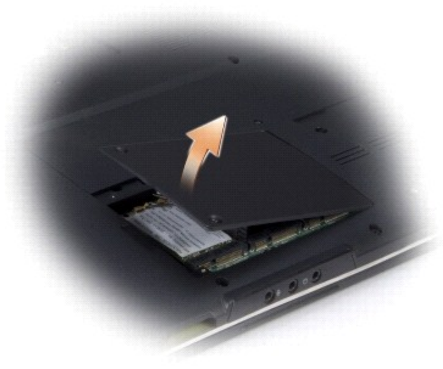
- Wireless Local Area Network (WLAN)
- Ultra Wide Band (UWB)
- Mobile Broadband or Wireless Wide Area Network (WWAN)

Removing a WLAN Card

1. Follow the procedures in Before You Begin.

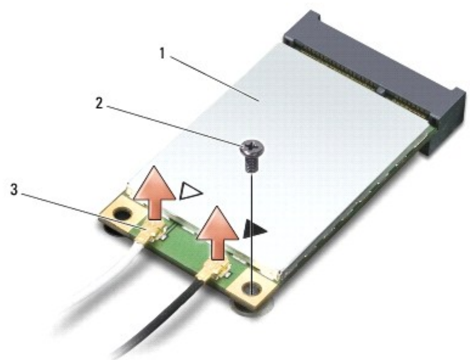
2. Turn the computer over.

3. Loosen the two captive screws on the Mini Card module cover and remove the cover.



4. Disconnect the antenna cables from the WLAN card.

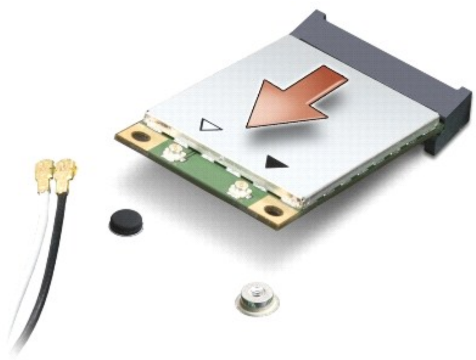
NOTE: The gray antenna cable may not be available in all computers. The presence of the gray antenna cable in your Mini Card compartment depends upon the type of display.



1	WLAN card	2	M2 x 3-mm securing screw	3	antenna cable connectors (2)

5. Release the WLAN card by removing the securing screw.

6. Lift the WLAN card out of its system board connector.



Replacing a WLAN Card

NOTICE: The connectors are keyed to ensure correct insertion. If you feel resistance, check the connectors on the card and on the system board, and realign the card.

NOTICE: To avoid damage to the WLAN card, never place cables under the card.

1. Insert the WLAN card connector at a 45-degree angle into the system board connector labeled "WLAN."

2. Press the other end of the WLAN card down into the slot on the system board until the card clicks into place.

3. Replace the M2 x 3-mm securing screw.

4. Connect the appropriate antenna cables to the WLAN card you are installing:

   If the WLAN card has two triangles on the label (white and black), connect the white antenna cable to the connector labeled "main" (white triangle), and connect the black antenna cable to the connector labeled "aux" (black triangle).

   If the WLAN card has three triangles on the label (white, black, and gray), connect the white antenna cable to the white triangle, connect the black antenna cable to the black triangle, and connect the gray antenna cable to the gray triangle.

   NOTE: The gray antenna cable may not be available in all computers. The presence of the gray antenna cable in your Mini Card compartment depends upon the type of display.

5. Secure unused antenna cables in the protective mylar sleeve.

6. Replace the cover and tighten the captive screws.

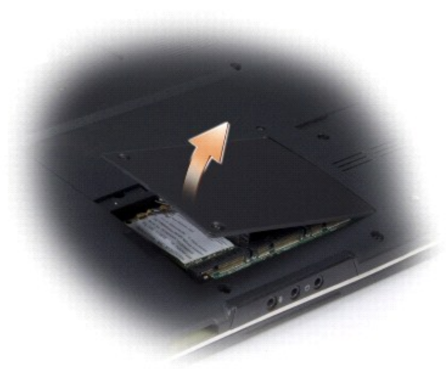
Removing a Mobile Broadband or WWAN Card

NOTE: WWAN is also available on an ExpressCard (see "Using ExpressCards" in your *Owner's Manual*).

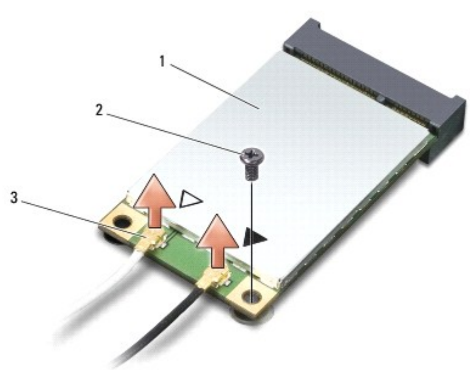
1. Follow the procedures in Before You Begin.

2. Turn the computer over.

3. Loosen the two captive screws on the Mini Card module cover and remove the cover.



4. Disconnect the two antenna cables from the WWAN card.

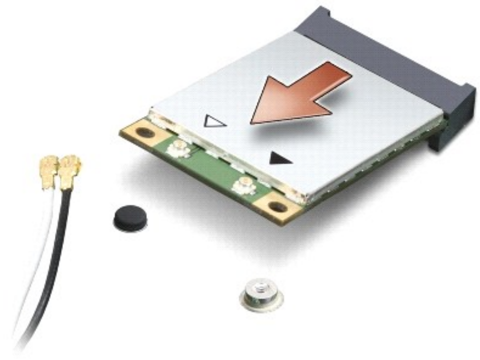


1	WWAN	2	M2 x 3-mm securing	3	antenna cable connectors

	card		screw		(2)

5. Release the WWAN card by removing the securing screw.

6. Lift the WWAN card out of its system board connector.



Replacing a WWAN Card

NOTICE: The connectors are keyed to ensure correct insertion. If you feel resistance, check the connectors on the card and on the system board, and realign the card.

NOTICE: To avoid damage to the WWAN card, never place cables under the card.

1. Insert the WWAN card connector at a 45-degree angle into the system board connector labeled "WWAN."

2. Press the other end of the WWAN card down into the slot on the system board until the card clicks into place.

3. Replace the M2 x 3-mm securing screw.

4. Connect the black antenna cable with a gray stripe to the connector labeled "aux" (black triangle), and connect the white antenna cable with a gray stripe to the connector labeled "main" (white triangle).

5. Secure unused antenna cables in the protective mylar sleeve.

6. Replace the cover and tighten the captive screws.

Flash Cache Module or Ultra Wide Band

If you ordered an FCM card or an UWB card with your computer, it is already installed. Only one of the cards can be installed in the slot provided.

The Flash Cache Module (FCM) is an internal memory card that helps improve the performance of your computer. The FCM card is also known as Intel Turbo Memory and the Intel® Flash Cache Logic Chip Mini-card.

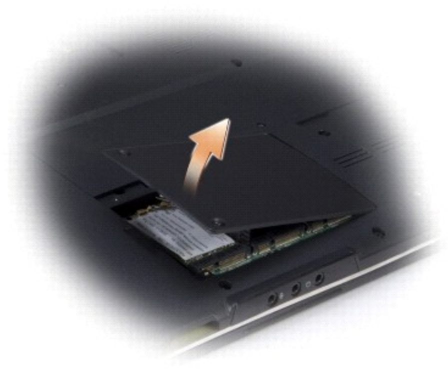
NOTE: This card is only compatible with the Microsoft Windows Vista™ operating system.

Removing the FCM or UWB

1. Follow the procedures in Before You Begin.

2. Turn the computer over.

3. Loosen the two captive screws on the Mini Card module cover and remove the cover.



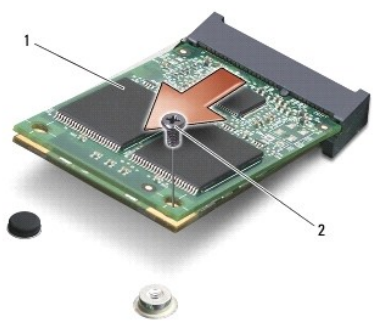
4. Ground yourself by touching one of the metal connectors on the back of the computer.

   NOTE: If you leave the area, ground yourself again when you return to the computer.

5. Remove the M2 x 3-mm securing screw.

NOTE: In case of an UWB card, disconnect the blue antenna cable from the UWB card.

6. Remove the FCM or UWB card.



1	FCM card	2	M2 x 3-mm securing screw

Replacing the FCM or UWB

NOTICE: Install the FCM or UWB in the WWAN or WPAN slot. Do not install an FCM or UWB in the WLAN card slot. Doing so may cause damage to your computer.

1. Insert the FCM or UWB connector at a 45-degree angle into the system board connector labeled "FCM" or "UWB."

2. Press the other end of the FCM or UWB down into the slot on the system board until the card clicks into place.

3. Replace the M2 x 3-mm securing screw.

NOTE: In case of an UWB card, reconnect the blue antenna cable to the UWB card.

4. Secure unused antenna cables in the protective mylar sleeve.

5. Replace the cover and tighten the captive screws.

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Optical Drive

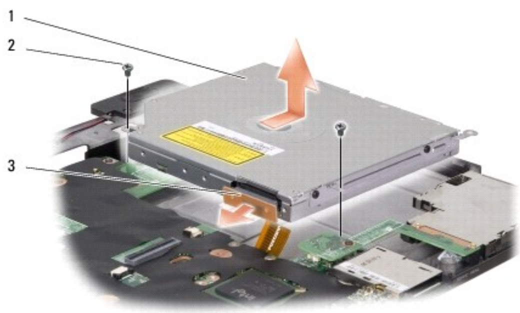
Dell™ XPS™ M1530 Service Manual

CAUTION: Before you begin any of the procedures in this section, follow the safety instructions in the *Product Information Guide*.

NOTICE: To avoid electrostatic discharge, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface (such as the back panel) on the computer.

Removing the Optical Drive

1. Follow the instructions in Before You Begin.
2. Remove the hinge covers and center control cover (see Removing the Hinge Covers and Center Control Cover).
3. Remove the keyboard (see Removing the Keyboard).
4. Remove the display assembly (see Removing the Display Assembly).
5. Remove the palm rest (see Removing the Palm Rest).
6. Remove the two M2 x 3-mm screws that secure the optical drive to the computer base.



1	optical drive	2	M2 x 3-mm screw (2)
3	cable connector		

7. Slide the drive at an angle toward the side of the computer.
8. Remove the cable connector from the back of the drive.
9. Lift the drive out of the computer base.

Replacing the Optical Drive

1. Connect the cable connector to the back of the drive.
2. Place the drive back in position and replace the two M2 x 3-mm screws that secure the optical drive to the computer base.
3. Replace the palm rest (see Replacing the Palm Rest).
4. Replace the display assembly (see Replacing the Display Assembly).
5. Replace the keyboard (see Replacing the Keyboard).

6. Replace the hinge covers and center control cover (see Replacing the Hinge Covers and Center Control Cover).

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Palm Rest

Dell™ XPS™ M1530 Service Manual

- [Removing the Palm Rest](#)
- [Replacing the Palm Rest](#)

CAUTION: Before you begin any of the procedures in this section, follow the safety instructions in the *Product Information Guide*.

NOTICE: To avoid electrostatic discharge, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface (such as the back panel) on the computer.

Removing the Palm Rest

1. Follow the instructions in [Before You Begin](#).

2. Remove any installed ExpressCards from the ExpressCard slot.

3. Remove any installed memory modules or Mini Cards (see [Memory](#) and [Communication Cards](#)).

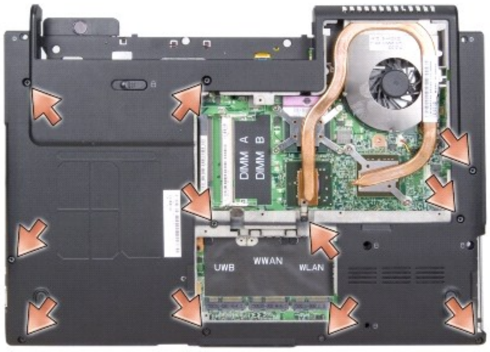
4. Remove the hinge covers and center control cover (see [Removing the Hinge Covers and Center Control Cover](#)).

5. Remove the internal card with Bluetooth® wireless technology (see [Removing the Card](#)).

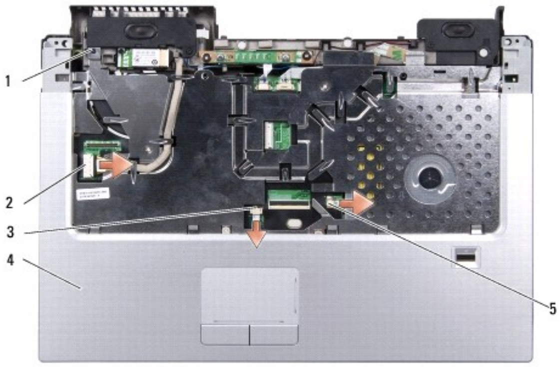
6. Remove the keyboard (see [Removing the Keyboard](#)).

7. Remove the display assembly (see [Removing the Display Assembly](#)).

8. Turn the computer upside down and remove the eleven M2.5 x 5-mm screws from the computer base.



9. Turn the computer top side up and remove the single screw from the top of the palm rest.



1	screw	2	bluetooth cable connector
3	touch pad cable connector	4	palm rest
5	biometric cable connector		

NOTICE: Pull on the plastic tab on top of the connectors to avoid damaging the connectors.

10. Disconnect the bluetooth cable connector, touch pad cable connector and the biometric cable connector from the system board.

11. Starting at the back center of the palm rest, use your fingers to gently ease the palm rest from the computer base by lifting the inside of the palm rest while pushing in on the outside.

12. Ease up the palm rest until you see the suspend switch cable connector.

NOTICE: Be extremely careful when easing up the palm rest. The palm rest, along with the cable that attaches it to the computer base are very fragile.



1	palm rest	2	suspend switch cable connector

13. Disconnect the suspend switch cable to separate the palm rest from the computer base.

NOTICE: Carefully separate the palm rest from the computer base to avoid damage to the palm rest.

Replacing the Palm Rest

1. Align the palm rest with the computer base and connect the suspend switch cable.
2. Gently snap the palm rest into place.
3. Connect the bluetooth cable, touch pad cable and the biometric cable to the system board.
4. Replace the screw on the top of the palm rest.
5. Turn the computer upside down and replace the eleven screws in the computer base.
6. Replace the display assembly (see Replacing the Display Assembly).
7. Replace the keyboard (see Replacing the Keyboard).
8. Replace the internal card with Bluetooth® wireless technology (see Replacing the Card).
9. Replace the hinge covers and center control cover (see Replacing the Hinge Covers and Center Control Cover).
10. Reinstall the memory modules or Mini Cards, if any.
11. Reinstall the ExpressCards in the ExpressCard slot, if any.

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ExpressCard Reader

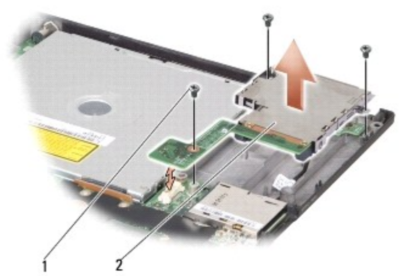
Dell™ XPS™ M1530 Service Manual

CAUTION: Before performing the following procedures, follow the safety instructions in the *Product Information Guide*.

NOTICE: To avoid electrostatic discharge, ground yourself by using a wrist grounding strap or by periodically touching a connector on the back panel of the computer.

Removing the ExpressCard Reader

1. Follow the procedures in Before You Begin.
2. Remove any installed ExpressCards from the ExpressCard slot.
3. Remove the display assembly (see Removing the Display Assembly).
4. Remove the palm rest (see Removing the Palm Rest).
5. Remove the three M2 x 3-mm screws that secure the ExpressCard reader to the computer base.



1	M2 x 3-mm screws (3)	2	ExpressCard reader

6. Pull up on the ExpressCard reader to disconnect it from the system board.

Replacing the ExpressCard Reader

1. Replace the ExpressCard reader.
2. Replace the three M2 x 3-mm screws that secure the ExpressCard reader to the computer base.
3. Replace the palm rest (see Replacing the Palm Rest).
4. Replace the display assembly (see Replacing the Display Assembly).
5. Reinstall the ExpressCards in the ExpressCard slot, if any.

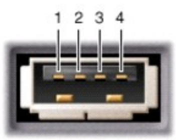
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Pin Assignments for I/O Connectors

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USB Connector



Pin	Signal
1	USB5V+
2	USBP−
3	USBP+
4	GND

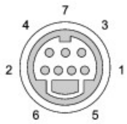
Video Connector

NOTE: The color of the video connector may vary in color between blue and black.



Pin	Signal	Pin	Signal
1	CRT_R	9	5V+
2	CRT_G	10	GND
3	CRT_B	11	MONITOR_DETECT−
4	NC	12	DDC_DATA
5	GND	13	CRT_HS
6	GND	14	CRT_VS
7	GND	15	DDC_CLK
8	GND		

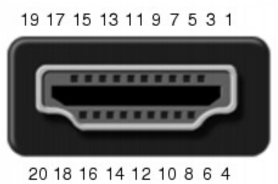
S-Video TV-Out Connector



S-Video	
Pin	**Signal**
1	GND
2	GND
3	DLUMA-L
4	DCRMA-L

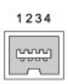
Composite Video	
Pin	**Signal**
5	GND
6	DCMPS-L
7	NC

HDMI Connector



Pin	Signal	Pin	Signal
1	TMDS Data 2+	11	TMDS Clock Shield
2	TMDS Data 2 Shield	12	TMDS Clock-
3	TMDS Data 2-	13	CEC
4	TMDS Data 1+	14	No Connect
5	TMDS Data 1 Shield	15	DDC Clock
6	TMDS Data 1-	16	DDC Data
7	TMDS Data 0+	17	Ground
8	TMDS Data 0 Shield	18	+5V Power
9	TMDS Data 0-	19	Hot Plug Detect
10	TMDS Clock+	20	SHELL

IEEE 1394a Connector



Pin	Signal

1	TPB–
2	TPB+
3	TPA–
4	TPA+

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S-Video Board

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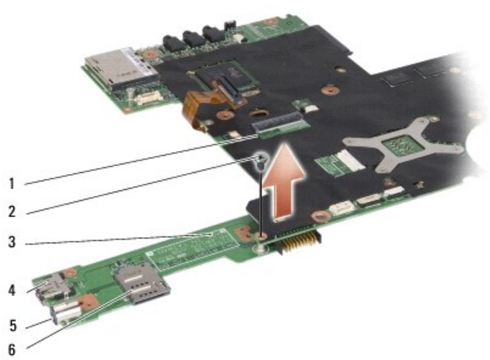
CAUTION: Before you begin any of the procedures in this section, follow the safety instructions in the *Product Information Guide*.

NOTICE: To avoid electrostatic discharge, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface (such as a connector on the back of the computer).

NOTICE: To help prevent damage to the system board, you must remove the battery from the battery bay before you begin working inside the computer.

Removing the S-Video Board

1. Follow the procedures in Before You Begin.
2. Remove the system board (see Removing the System Board).
3. Remove the screw that secures the S-Video board to the system board.



1	system board	2	screw
3	S-Video board	4	USB connector
5	S-Video connector		SIM card slot

4. Detach the S-Video board from the system board connector.

Replacing the S-Video Board

1. Attach the S-Video board to the system board connector.
2. Replace the screw that secures the S-Video board to the system board connector.
3. Replace the system board (see Replacing the System Board).
4. Replace the wireless sniffer board (see Replacing the Wireless Sniffer Board).
5. Replace the ExpressCard reader (see Replacing the ExpressCard Reader).
6. Replace the optical drive (see Replacing the Optical Drive).
7. Replace the palm rest (see Replacing the Palm Rest).
8. Replace the keyboard (see Replacing the Keyboard).

9. Replace the hinge covers and center control cover (see Replacing the Hinge Covers and Center Control Cover).

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Wireless Sniffer Board

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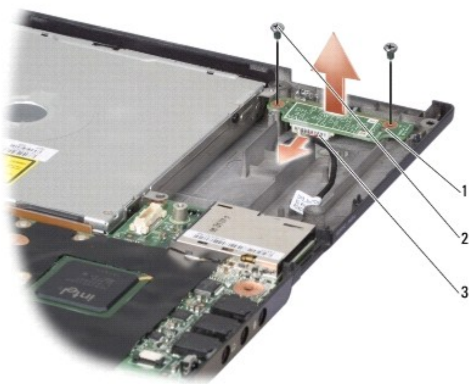
CAUTION: Before you begin any of the procedures in this section, follow the safety instructions in the *Product Information Guide*.

NOTICE: To avoid electrostatic discharge, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface (such as the back panel) on the computer.

NOTICE: Handle components and cards by their edges, and avoid touching pins and contacts.

Removing the Wireless Sniffer Board

1. Follow the instructions in [Before You Begin](#).
2. Remove any installed ExpressCards from the ExpressCard slot.
3. Remove the palm rest (see [Removing the Palm Rest](#)).
4. Remove the ExpressCard reader (see [Removing the ExpressCard Reader](#)).
5. Disconnect the wireless sniffer board cable from the system board.
6. Remove the two M2 x 3-mm screws from each side of the sniffer board and remove it from the computer base.



1	wireless sniffer board	2	M2 x3-mm screw (2)	3	wireless sniffer board cable connector

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Replacing the Wireless Sniffer Board

1. Replace the sniffer board.
2. Replace the two M2 x 3-mm screws on each side of the sniffer board.
3. Reconnect the wireless sniffer board cable to the system board.
4. Replace the ExpressCard reader (see [Replacing the ExpressCard Reader](#)).
5. Replace the palm rest (see [Replacing the Palm Rest](#)).
6. Reinstall the ExpressCards in the ExpressCard slot, if any.

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Speaker

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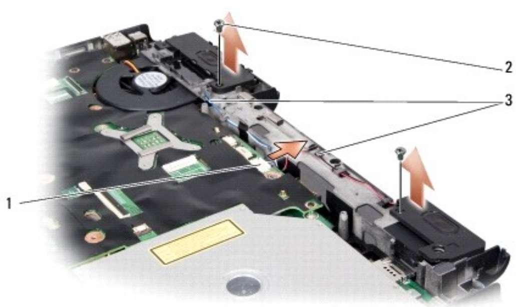
- Removing the Speaker
- Replacing the Speaker

CAUTION: Before you begin any of the procedures in this section, follow the safety instructions in the *Product Information Guide*.

NOTICE: To avoid electrostatic discharge, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface (such as the back panel) on the computer.

Removing the Speaker

1. Follow the instructions in Before You Begin.
2. Remove any installed ExpressCards from the ExpressCard slot.
3. Remove any installed memory modules or Mini Cards (see Memory and Communication Cards).
4. Remove the hard drive (see Removing the Hard Drive).
5. Remove the hinge covers and center control cover (see Removing the Hinge Covers and Center Control Cover).
6. Remove the keyboard (see Removing the Keyboard).
7. Remove the display assembly (see Removing the Display Assembly).
8. Remove the palm rest (see Removing the Palm Rest).
9. Disconnect the button board cable connector from the system board (see Removing the Button Board).
10. Remove the two speaker screws (one on each speaker) from the computer base.



1	speaker cable connector	2	screw (2)	3	speaker cable routing

11. Disconnect the speaker cable connector from the system board.
12. Make note of the speaker cable routing.
13. Remove the speakers.

Replacing the Speaker

1. Replace the speakers and the speaker cables.

2. Connect the speaker cable connector to the system board.
3. Replace the two speaker screws (one on each speaker) that secure the speakers to the computer base.
4. Connect the button board cable connector to the system board.
5. Replace the palm rest (see Replacing the Palm Rest).
6. Replace the display assembly (see Replacing the Display Assembly).
7. Replace the keyboard (see Replacing the Keyboard).
8. Replace the hinge covers and center control cover (see Replacing the Hinge Covers and Center Control Cover).
9. Replace the hard drive (see Replacing the Hard Drive).
10. Reinstall the memory modules or Mini Cards, if any.
11. Reinstall the ExpressCards in the ExpressCard slot, if any.

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System Board

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CAUTION: Before you begin any of the procedures in this section, follow the safety instructions in the *Product Information Guide*.

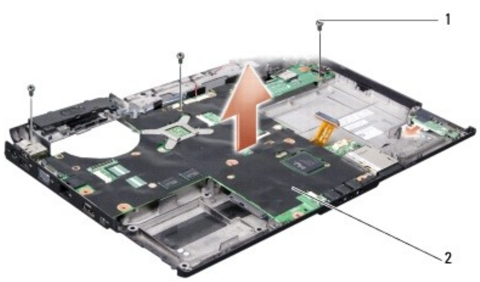
NOTICE: To avoid electrostatic discharge, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface (such as the back panel) on the computer.

The system board's BIOS chip contains the Service Tag, which is also visible on a barcode label on the bottom of the computer. The replacement kit for the system board includes a CD that provides a utility for transferring the Service Tag to the replacement system board.

NOTICE: Handle components and cards by their edges, and avoid touching pins and contacts.

Removing the System Board

1. Follow the instructions in Before You Begin.
2. Remove any installed ExpressCards from the ExpressCard slot.
3. Remove any installed memory modules or Mini Cards (see Memory and Communication Cards).
4. Remove the hard drive (see Removing the Hard Drive).
5. Remove the internal card with Bluetooth® wireless technology (see Removing the Card).
6. Remove the display assembly (see Removing the Display Assembly).
7. Remove the palm rest (see Removing the Palm Rest).
8. Remove the optical drive (see Removing the Optical Drive).
9. Remove the ExpressCard reader (see Removing the ExpressCard Reader).
10. Remove the wireless sniffer board (see Removing the Wireless Sniffer Board).
11. Disconnect the button board cable from the system board connector (see Removing the Button Board).
12. Disconnect the speaker cable from the system board (see Removing the Speaker).
13. Remove the three remaining M2.5 x 5-mm screws that secure the system board to the computer base.



1	M2.5 x 5-mm screw (3)	2	system board

14. Lift the system board at an angle toward the side of the computer and out of the computer base.

Replacing the System Board

1. Follow all of the steps in Removing the System Board in reverse order.

NOTICE: Before turning on the computer, replace all screws and ensure that no stray screws remain inside the computer. Failure to do so may result in damage to the computer.

2. Turn on the computer.

NOTE: After you have replaced the system board, enter the computer Service Tag into the BIOS of the replacement system board.

3. Insert the CD that accompanied the replacement system board into the appropriate drive. Follow the instructions that appear on the screen.

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